Polar Research Board

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LONG-TERM GOALS

The mission of the Polar Research Board (PRB) is to promote excellence in polar science and provide assistance to federal agencies and the nation on issues of importance in cold regions. The PRB strives to enhance understanding of the Arctic and Antarctic, guide U.S. research efforts so they are responsive to the needs of the nation, ensure that the voice of the polar science community is heard in government decision-making, encourage coordination and collaboration within the U.S. polar community, and assist in maintaining our international leadership role in polar science. The PRB is responsible for conducting studies, workshops, and other activities that explore important topics in natural and social sciences, technology, and resource management related to cold regions. The PRB represents U.S. interests and facilitates participation of U.S. scientists in two major international nongovernmental polar scientific organizations, the Scientific Committee on Antarctic Research (SCAR) and the International Arctic Science Committee (IASC). Our primary goal in this contract period is to continue strengthening our program – doing more visible and valuable activities, as possible with our small staff. We do not conduct research, but work to give research a broader impact on society, both here and internationally. Support from ONR helps us achieve these goals and is essential to the PRB's effectiveness.

APPROACH

The Polar Research Board (PRB) is a unit of The National Academies complex, an independent, nongovernmental organization that relies on the best minds of the scientific community to provide objective guidance on complex science and science policy issues. The PRB, following The Academies' rigorous procedures, serves as a unique resource to federal agencies, Congress, and others with interests in cold regions. The Board is a mechanism to: promote excellence in polar science, provide a voice in policy-making for the diverse scientists who work on arctic and Antarctic issues, and make these experts available to assist the government on request. The PRB is responsible for studies of issues in the natural and social sciences, technology, and resource management related to the polar regions. In addition, the PRB represents U.S. interests and facilitates participation of U.S. scientists in two international, nongovernmental scientific organizations, the Scientific Committee on Antarctic Research (SCAR) and the International Arctic Science Committee (IASC), which are dedicated to planning and coordinating research in the Antarctic and Arctic, respectively, and which involve nations with active polar science programs.

The PRB has a unique ability to focus attention on key issues, solicit expert opinions on technical questions, and propose priorities to help public policy-makers. It is an independent body available to help agencies in the development and maintenance of strong programs of polar research. The PRB's coverage of both arctic and antarctic science makes it a unique and dynamic resource for advancing polar science and guiding national policy decisions related to both polar regions.

The PRB's mission covers a substantial geographic portion of the earth and a diverse range of disciplines, so the PRB's members are selected to bring both breadth and depth of experience. The Board's members can come from academic institutions, industry, and national laboratories and bring expertise in fields such as marine and terrestrial biology, earth sciences, meteorology, oceanography, space physics, atmospheric chemistry, engineering, and the social sciences. They are split relatively evenly between those with arctic and those with antarctic expertise, with many having experience at both poles. The PRB's current members are:

Donal Manahan (chair), University of Southern California
Richard Alley, Pennsylvania State University
Robin Bell*, Lamont-Doherty Earth Observatory of Columbia University, Palisades, New York
Akhil Datta-Gupta*, Texas A&M University, College Station
Henry Huntington, Eagle River, Alaska
Amanda Lynch*, University of Colorado, Boulder
Robie Macdonald*, Fisheries and Oceans Canada, British Columbia
Miles McPhee*, McPhee Research Company, Naches, Washington
P. Buford Price, Jr., University of California, Berkeley
Carole Seyfrit, Old Dominion University, Virginia
Marilyn Walker, University of Alaska, Fairbanks

* Appointed in March 2001.

WORK COMPLETED

The PRB conducts its core functions—providing information and assistance to the federal government on polar issues, planning and conducting oversight of PRB activities, and serving as the U.S. National Committee to SCAR and IASC—via meetings, planning sessions, workshops, conferences, telephone, mail, and email. Board meetings are essential to the PRB's effectiveness, and they are where the PRB's volunteer members interact, identify emerging issues, and interact with agency liaisons and the community. Board meetings allow the PRB to plan new studies, give oversight to ongoing activities, coordinate with other organizations, and prepare delegates for scheduled international meetings. Board meetings provide the federal sponsors and the scientific community with opportunities to give input to the Board, especially related to SCAR and IASC. The PRB selects at least one topic for substantive debate at each meeting, in addition to its regular business, and attempts to hold one planning session on a special topic at another time during the year.

As one of its responsibilities, the PRB gives oversight to ad hoc committees of experts who produce focused written reports on critical scientific issues to requesting federal agencies. These reports provide information and analysis useful to decision-makers and the polar community. In general, the conduct of studies, workshops, conferences, and other projects are funded with targeted allocations, while project planning and oversight is a core PRB function. Current PRB studies include:

-- Review of the Gulf of Alaska Ecosystem Monitoring Program (sponsor: NOAA, Exxon Valdez Oil Spill Trustee Council)

-- Abrupt Climate Change (sponsor: USGCRP)

-- Review of the Oil Spill Recovery Institute's Arctic and Subarctic Research Program (submitted to: Oil Spill Recovery Institute)

-- Frontiers in Polar Biology (submitted to: NSF)

-- Polar Atmospheric Chemistry (joint with the Board on Atmospheric Sciences and Climate) (NRC funded planning activity, sponsors to be determined)

Summary of accomplishments and plans for 2001 - 2002:

Polar Geophysical Data Sets

In April 2001, the final report for this study was released.

Review of Gulf of Alaska Ecosystem Monitoring Program

Committee has held three meetings and produced two reports (November 2000 letter report and February 2001 interim report). Committee is about to begin review of draft Science Plan; fourth meeting will be held September 2001 in Seattle, WA; fifth meeting to be held in November 2001 in Washington, D.C.; final report expected in spring of 2002.

Abrupt Climate Change

Joint PRB-OSB-BASC study funded by USGCRP. Committee has held all its meetings and drafted final report. Report at outside review in August 2001; final report expected by November 2001.

Cumulative Environmental Impacts of Alaskan North Slope Oil and Gas Development

Congressional request. Joint activity, with BEST as lead and PRB as assisting unit.. Committee has held 3 information gathering meetings (January, April, and July 2001) with two more planned for September and December 2001. Report expected in summer 2002.

Frontiers in Polar Biology

Proposal developed in response to discussions with NSF. Submitted and awaiting approval and funding. One year activity from receipt of funds.

Review of Research Program of the Oil Spill Recovery Institute

Proposal developed in response to discussions with Oil Spill Recovery Institute. Submitted and awaiting approval and funding. One year activity from receipt of funds.

Arctic Social Science

Chris Elfring and PRB members Carole Seyfrit and Patrick Webber (PRB's IASC Delegate) organized session on Agency Perspectives for planning NSF planning workshop in Seattle, January 2001.

US role in Climate and Cryosphere Program (CLIC)

Planning session was held in February 2001. Decided that NRC was not the mechanism to facilitate increased US participation in CLIC and did not pursue further activity.

Lake Vostok

PRB continues to monitor evolution of this multi-national initiative.

IASC (delegate)

PRB selected new delegate: arctic ecologist Patrick Webber, Michigan State University. Webber led US delegation to Arctic Science Summit Week, April 2001, in Iqaluit, Canada.

IASC (general)

PRB continues to seek ways to provide better oversight to IASC and improve exchange of information between U.S. science community and the organization. New delegate is strong step; also plan to regularly send one other Board member to annual IASC meeting to improve our understanding of activities. If possible, will seek to invite occasional member of IASC project groups to Board meeting to give in-depth view of selected activities. PRB granting travel awards (sponsor: NSF) to encourage participation in IASC-related meetings.

IASC (review)

PRB conducted a telephone survey/review of US participants in IASC to gather information on the nature of their participation, strengths and weaknesses of the organization, and way to improve US involvement.

SCAR (general)

PRB continues to seek ways to provide better oversight and improve information exchange. SCAR working group representatives participated in PRB's Board Meeting in March 2001. Will try to send one additional PRB member and staff director, along with US delegates and working group representatives, to the biannual meeting, to increase understanding of the organization. Continue to require working group representatives to do email summaries of meetings and make direct contact with their NSF counterparts before and after meetings. Next SCAR meeting is July 2002 in Shanghai, China.

RESULTS AND IMPACT/APPLICATION

The PRB produced a range of results during the past year, each contributing to our broad mission of promoting excellence in polar science and providing assistance to federal agencies and the nation on polar issues. We continued to plan and conduct issue-specific studies and workshops (e.g., fall 2001

planning workshop on polar atmospheric chemistry) that explore important issues in natural and social sciences, technology, and resource management related to the polar regions. We increased our oversight of U.S. participation in the Scientific Committee on Antarctic Research (SCAR) and the International Arctic Science Committee (IASC). Our primary goal in this contract period has been to continue strengthening our program – doing more visible and valuable activities, as possible, with our small staff and tight budget. We do not conduct research, but work to give research a broader impact on society, both here and internationally.

TRANSITIONS

Opinions, advice and publications from the National Academies of Sciences, including the Polar Research Board, are respected by the scientific community and government decision-makers, and are frequently cited as guidance. For example, the recent report "Climate Change Science" (July 2001) received wide attention in Congress, the Executive Branch, and media.

PUBLICATIONS

Polar Research Board, 2001. *Enhancing NASA's Contribution to Polar Science: A Review of Polar Geophysical Data Sets*.

Polar Research Board, 2001. *The Gulf Ecosystem Monitoring Program: First Steps Toward a Long-Term Research and Monitoring Plan* (Interim Report).

Polar Research Board, 2001. Report on United States Antarctic Research Activities #41, 2000-2001. Report No. 41 to SCAR.

Polar Research Board, 2000. Proceedings of XXVI Meeting of SCAR, July 2000, Tokyo, Japan.

Polar Research Board, 2000. Report on United States Antarctic Research Activities #40, 1999-2000. Report No. 40 to SCAR.

Polar Research Board, 2000. Handbook for U.S. Participants in the Scientific Committee on Antarctic Research

Polar Research Board, 2000. Report on United States Antarctic Research Activities #39, 1998 – 1999. Report No. 39 to SCAR.

National Research Council, Polar Research Board, 1999. *Ocean Drilling Research: An Arctic Perspective*.

National Research Council, Oceans Studies Board/Polar Research Board, 1998. *The Community Development Quota Program in Alaska and Lessons for the Western Pacific*. 215 pp.

National Research Council, Polar Research Board, 1998. *Future Directions for NSF's Arctic Natural Sciences Program*. 67 pp.